These topical maps show popular research areas in computer science, generated from the titles of computer science research papers in the DBLP computer science bibliography. Larger terms appear more frequently in paper titles. Terms that frequently appear together in titles are drawn close to one another in the map, and clustered to create “countries” of related topics. Terms are extracted by matching part-of-speech tags and ranked using the Cosine Similarity algorithm. Term co-occurrence similarity is calculated using a modified Jaccard Coefficient function. 70,000 papers were sampled from DBLP to create the map above.

**DBLP Papers**
Maps are made by extracting terms from paper titles in the DBLP bibliography of computer science papers. DBLP contains

- 2,164,720 papers
- 1,324 journals
- 6,904 conferences
- 1,237,445 authors

- A date range of 1936–2012
- An average of 10.3 words per title
- An average of 2.9 terms per title

**Heatmap Construction**
Heatmaps show term usage within a target set of papers, from a particular author, venue, or time period. The color intensity of the heatmap is determined by how frequently the terms underneath were used in the target set of papers, showing the importance of these topics within the documents.

**Temporal Heatmaps**
The temporal heatmaps above show samples of papers in ten year periods from 1954 to present, providing profiles of computer science research within each time period. In the first few decades, the heatmaps have the highest intensity in the northeast, over algorithmic topics and terms from theoretical computer science. As the field matures and applications develop throughout the next few decades, we see a migration and diffusion over the rest of the map, with growing intensity over applications and systems. In the past two decades, terms in the southwest related to the Internet, data, and performance gain intensity as research in these topics becomes widespread.

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